



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,554	08/24/2006	Andreas Christel	76775.16	8607

7590 09/21/2007
Francis C Hand
Carella Byrne Bain Gilfillan Cecchi Stewart
& Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

LISTVOYB, GREGORY

ART UNIT	PAPER NUMBER
----------	--------------

1711

MAIL DATE	DELIVERY MODE
-----------	---------------

09/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,554

Applicant(s)

CHRISTEL ET AL.

Examiner

Gregory Listvoyb

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/24/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 4-17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant uses term "The method according to one of the preceding claims", which is improper. Claim dependency should be clearly defined.

There is a typo found in claim 2. Instead of "granulates with a mean diameter of 0.4-0.7 mm", it should be ""granulates with a mean diameter of 0.4-1.7 mm", based on the Specification.

Claim Rejections - 35 USC § 103

Claims 1-7, 9, 11-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Christel (WO2004/055093, cited with equivalent US 2006/0147666) herein Christel in combination with Encyclopedia of Polymer Sci and Tech, vol 2, page 518, herein Encyclopedia, and Pelletizing system options for extrusion (Extrusion Auxilliary Services), herein Pelletizing System.

Christel discloses a method for the manufacture of a partially crystalline polycondensate (PET, see line 0030, meeting the limitations of Claim 6), comprising the following steps:

- a) Manufacture of a polycondensate prepolymer melt with IV value of 0.15 to 0.4 dl/g (see line 0040, meeting the limitations of claim 7);
- b) Formation of granulates and solidification of the polycondensate-pre-polymer melt, by means of a granulation device, wherein the granulates is cut upon exit from a nozzle of the granulation device;
- c) Raising of the degree of crystallization of the prepolymer granulates; and
- d) Raising the molecular weight of the granulates by means of solid phase polycondensation (see lines 0071-0074), (both c) and d) processes take place simultaneously at high temperature, meeting the limitations of Claim 16) characterized in that in the step b), granulates with a mean diameter of less than 2 mm, typically between 0.4 and 1.9 preferably between 0.7 and 1.6 mm (see line 0057, meeting the limitations of Claim 2) are formed (see line 0039).

Regarding Claim 9, Christel discloses that crystallization step c) is carried out in a fluid bed or fluidized bed reactor with the action of a fluidizing gas (see line 0070).

Regarding Claims 13 and 14-15, Christel discloses more than 94% of dicarboxylic acid component and more than 98% of ethylene glycol (^{see} ~~see~~ lines 0053-0054).

Regarding Claims 3-5 and 11, Christel does not disclose that granulate is cut upon exit from a nozzle, use of circumferential knife and water jet.

Encyclopedia and pelletizing system teaches standard granulation procedures with the above knife and water jet.

It would have been obvious to a person of ordinary skills in the art to use standard granulation technique, such as using nozzle with multiple holes, circumferential knife and water jet, since the related equipment and experience are broadly available.

Claims 5, 8, 10, 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Christel in combination with Culbert et al (WO 03/031133 cited with equivalent US 7193032) herein Culbert.

Christel discloses a method for the manufacture of a partially crystalline polycondensate (see discussion above).

Regarding claims 8 and 10, Christel teaches that solidification shall proceed in such a way that no crystal structure is obtained with excessively large crystallites, which would require high processing temperatures.

However, he does not disclose a degree of PET crystallization and that the temperature of process b) and c) does not fall under 1/4 of melting temperature of PET.

Culbert discloses a process for controlling crystallization of polyesters (PET) with their water content. Culbert achieves the required crystallization by contacting PET with water, whereas the lowest temperature of PET treatment is 60C (T_m of PET is 240C) (see Example 1). At certain conditions (10min under boiling water, see Example 3) no visible crystallization occurs.

It would have been obvious to a person of ordinary skills in the art to use Culbert's pretreatment of palletized PET prepolymer in order to achieve low (less than 10%) degree of crystallization in order to avoid high processing temperatures.

Claim 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Christel in combination with Duh et al (US 5478868) herein Duh.

Christel discloses a method for the manufacture of a partially crystalline polycondensate (see discussion above).

Christel does not disclose foamed polyester granules.

Duh discloses process, where foamed PEN prepolymer was prepared. Use of foamed prepolymer allows to decrease solid state polymerization temperature to achieve the same target of IV (see Column 6, line 40).

Therefore, it would have been obvious to a person of ordinary skills in the art to use foamed prepolymer allow to decrease solid state polymerization temperature to achieve the same target of IV.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

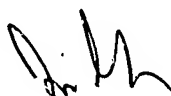
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb
Examiner
Art Unit 1711

GL



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700